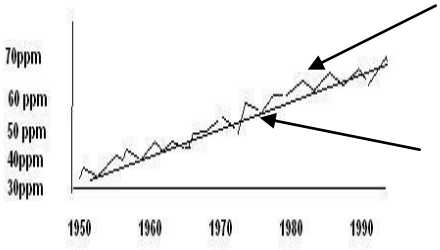
Global Warming: A warming of the entire planet over a period of several years, decades or centuries. Many things control the temperature of the Earth. Fluctuations in the Sun's energy, cloud cover, the chemical composition of the atmosphere, and the amount of ash or particulate matter suspended in the air all impact the Earth's temperature. Greenhouse gasses are gasses that increase the ability of the atmosphere to trap heat next to the planet. Human activity, such as burning plants and fossil fuels, increases carbon dioxide, carbon monoxide and particulate matter in the atmosphere increasing the warming. Methane is an even more potent green house gas and is on the increase from termites eating trees cut in clear cutting operations, cattle herds, and plant waste from agriculture. The increase in these greenhouse gasses through human activity can be controlled by changes in the activity.

As early as the 1800s geochemists were voicing concern over the tremendous release of carbon dioxide into the atmosphere from burning fossil fuels such as coal. Studies done over decades on a high mountain in Hawaii showed that through the seasonal peaks and lows of carbon dioxide concentrations in the atmosphere, there was a pattern of increase in concentrations over time.



In this graph, there are jagged lines that represent the seasonal changes in carbon dioxide. It decreases in summer when photosynthesis is taking place, and increases in winter when deciduous trees lose their leaves and photosynthesis slows.
However note the straight lines connecting years all move from lower to higher concentrations over time. This is the evidence that carbon dioxide is on the increase.

Other green house gases are also increasing, some far more potent than carbon dioxide. This led to an investigation of effect on the Earth's overall temperature. Again, over decades there were cooling and warmer periods, particularly locally, but there was a general rise in overall temperature of the whole planet. These rises have occurred in the past, and right now, there is evidence that at least some of the rise is caused by actions of people, and are therefore reversible. Some of the effects of unchecked warming would be changes in rain patterns, increase in storm severity, and melting of polar ice caps (already occurring) which alone would lead, in worse case scenario, to an increase in ocean depth.